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09/034,187	03/03/98	MATYJASZEWSKI	K 7057-004-0XD
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RABAGO, R

ART UNIT

PAPER NUMBER

1713

DATE MAILED:

02/17/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**09/034,187**

Applicant(s)  
**Matyjaszewski et al.**

Examiner  
**R. Rabago**

Group Art Unit  
**1713**



☒ Responsive to communication(s) filed on Aug 31, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-14 and 21-61 is/are pending in the application.

Of the above, claim(s) 1-14, 46-54, 60, and 61 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 21-45 and 55-59 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### DETAILED ACTION

1. Amendment of claims 31 and 32, presentation of new claims 55-61, a substitute specification, and associated remarks are acknowledged.
2. Applicant's election with traverse of claims 21-45 in Paper No. 9 is acknowledged. The traversal is on the ground(s) that the claimed polymers cannot be made by another method and that there is no search burden. This is not found persuasive because, as has been stated, the claimed polymer can be made by other methods. See Odian, Principles of Polymerization, 1991, pp. 205-232, wherein numerous methods of synthesizing the claimed polymer are described. See also page 14, line 20, of the instant specification wherein applicants admit that systems similar to those contained in the instant disclosure are known in organic synthesis. See also the rejection set forth in item 10 below. Applicants are advised that numerous claims are sufficiently broad to read on trimers, oligomers, and polymers synthesized by virtually any method and containing no specific functionalities or structure.

The search required for each invention is not required of the other. Contrary to applicant's implication that only one subclass is searched for each invention, the specified subclasses are merely the subclasses where each invention would have its primary classification. A full patentability search involves searching numerous subclasses as well as the scientific literature and

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foreign patent documents, which could involve thousands of documents for each invention.

Accordingly, as the requirement is still deemed proper, it is therefore made FINAL.

Upon further consideration, the requirement for election of species is withdrawn.

Claims 21-45 and newly presented claims 55-59 are under examination. New claims 60 and 61 do not correspond to the elected invention, and will be added to the non-elected group. Claims 1-14, 46-54, 60 and 61 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention

### *Specification*

3. The specification is objected to for the following reasons:

a) On page 49, line 11, the parameter  $\rho$  is not understood and does not appear to have been defined in the specification.

b) The parameters  $P_i$  and  $P_l$  (pp. 83-84) are not understood and do not appear to be defined in the specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

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***Drawings***

5. In addition to the drawing deficiencies noted in the draftsman's review noted in PTO Form 948 (attached hereto), the drawings are objected to for the following reasons.

- a) In Figures 6, 7 and 8, x-axis labels are unclear and/or not properly spaced.
- b) In Figures 12-14, axis labels and all blocked-in text is of such small font size and poor copy quality as to be incomprehensible.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first and second paragraphs of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 21-23, 26-28, 30, 31, 33-43, 45 and 55-59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a) Neither the claims nor the specification provide proper definition for ascertaining the scope of the following limitations:

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- (i) “controlled” in claims 21, 28, 30, 34, 43 and 45, relating to the molecular weight distribution and polymer composition;
- (ii) “specific identified thermally stable groups” in claims 21 and 22;
- (iii) “an identifiable specific head group” in claim 34;
- (iv) “a composition that changes in a predictable, or calculable, manner” in claims 35 and 36;
- (v) “predetermined” in claim 43;
- (vi) “oleophobic” in claims 56 and 58; (note: it is acknowledged that the art uses this term; however, the art does not appreciate that this term, when used to describe monomers, describes a clearly defined set of members);
- (vii) “solvent-resistant” in claim 58;
- (viii) “Y” in claims 37, 38 and 45; (note: the suggestion of what these groups “may be” at page 15 of the specification is noted, but such exemplary description does not clearly limit the claims);
- (viii) “where applicable” in claims 37 and 42;
- (ix) “M<sup>1</sup>” and “p” in claim 45;
- (x) “symmetrical” in claims 26, 27, 33,

Regarding items (i) through (x), the presence of exemplary and perhaps preferred values for some of these parameter in the specification is noted; however, such descriptions from the

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specification are not read into the claims unless they are specific definitions which clearly limit the claims.

b) In claims 37, 38, 39, 41, 42 and 45, applicants have not used proper Markush format for designating optional choices in a list of species (see MPEP 2173.05(h)), resulting in uncertainty as to whether a single polymer or optionally a mixture of different polymers is intended. Specifically, in the list of polymers in claim 37, lines 5-7, if alternative selection is intended, then each member should be separated by a comma, and the word “or” should precede the final member. This problem exists in numerous analogous locations in this claim as well as analogous locations in claims 38, 39, 41, 42 and 45.

c) In claims 37-42, applicants have used the feature “ ... ” in the descriptions of the polymer structures, monomer choices, and subscript values, apparently in an attempt to indicate serially intervening members. However, it is not understood which intervening members are intended because there are no numbers or letters between those indicated as having intervening members. For example, in the structure of claim 37, line 7, no integers exist between 3 and 4, and no letters exist between r and s. Accordingly, the nature and number of the intervening members cannot be determined. This same problem exists throughout claims 37-42.

d) In claim 37, line 27, the word “riot” is not understood.

e) In claim 37, line 40, upper case “Z” does not find sufficient antecedent basis in the claim. As all other parameters are case-consistent, it cannot be determined whether this represents a parameter distinct from lower case “z”.

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- f) In claim 37, line 57, the meaning of “(i+j) 100 or 0” is not understood.
- g) In claim 37, line 61, it would appear that “e;f” should be e:f’.
- h) In claim 42 line 13, “z=2-6” should be changed to “z is from 2 to 6” to clarify its meaning and to be consistent with the way this parameter was designated in other claims.
- i) In claim 45, line 18, the word “arid” is not understood.

The large number of problems with 35 USC 112 and the degree to which they impact the scope of the claims preclude a properly focused search of the prior art, and therefore claims 21-23, 26-28, 30, 31, 33-43, 45 and 55-59 will not be further examined for patentability under 35 USC 102 and 103 until the issues indicated above are addressed. Furthermore, the IDS documents submitted will not be considered in view of the claims until the scope thereof has been more clearly defined.

While not forming the basis of rejection under 35 USC 112, applicants are advised of the following:

- aa) absent clear indication of intended scope, the limitation “functional group” in claim 22 is deemed to be inclusive of every known organic or inorganic functionality except alkyl;
- bb) absent clear indication of intended scope, the limitation “groups formed by conventional chemistry” in claims 24, 26, 29 and 37 is deemed to be inclusive of every known organic or inorganic functionality.



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8. Claim 44 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as filed does not appear to contain any mention of a hyperbranched dendritic copolymer prepared by a free radical polymerization process, and this claim is deemed to comprise new matter.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 24, 25 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veregin et al. (US 5,610,250).

Although unexemplified, patentee provides clear disclosure of a method of making the claimed polymer at col. 14, line 42, through col. 15, line 22. The disclosed method is similar to that of the instant disclosure in that the growing polymer chain is living or pseudo living by way of its being made dormant and then reactivated between polymerization stages. Furthermore, the polymer chains of the disclosed invention have an initiator fragment at one end and another

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functional group at the other end. Regarding claim 32, although the suggested method at col. 14, lines 24-41, discloses a styrene/butyl acrylate block copolymer, the use of any of the simple acrylates, inclusive of methyl acrylate, is obvious in view of the ordinary level of skill in the art. Further suggestion to use the claimed monomers may be found at col. 26, lines 23 and 28.

One of ordinary skill in the art would be motivated to use the disclosed method to make the claimed polymers because they are strongly suggested by patentee, with reasonable success expected.

### ***Double Patenting***

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claim 29 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6 and 8 of U.S. Patent No. 5,789,487. Although the conflicting claims are not identical, they are not patentably distinct from each other because

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polymers of overlapping scope are claimed. It is particularly noted that the patented star polymer comprises a multi functional initiator fragment which serves as the basis for each polymer chain.

***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rob Rabago whose telephone number is (703) 308-4347. The examiner can normally be reached from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are:

(703) 305-5408 (official), (703) 305-3599 (official after final) and (703) 306-3429 (unofficial).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

RRabago *RR*

February 10, 2000

*David Wu*  
DAVID W. WU  
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